

WHAT IS CLAIMED IS:

1. A method of calculating the duration a target area is included within an image stream obtained by an image capture system, the method comprising:

analyzing at least one field of the image stream for inclusion of the target area;

5 and

automatically incrementing a counter upon confirmation that the target area is included within the at least one field.

2. The method according to claim 1, further comprising calculating an  
10 occlusion parameter of the target area.

3. The method according to claim 1, wherein a fee is calculated in response to the counter.

4. The method according to claim 2, wherein the occlusion parameter is  
15 calculated in response to a pixel count of an occlusion of the target area and a pixel count of the target area.

5. The method according to claim 4, wherein the occlusion parameter is a  
20 ratio of the pixel count of the occlusion to the pixel count of the target area.

6. The method according to claim 2, wherein the increment is the numerical result of the occlusion parameter subtracted from one.

7. The method according to claim 1, further comprising calculating a  
25 foreground parameter of the target area.

8. The method according to claim 7, wherein the foreground parameter is  
30 calculated in response to a pixel count of the target area and a pixel count of the at least one field.

9. The method according to claim 8, wherein the foreground parameter is a ratio of the pixel count of the target area to the pixel count of the at least one field.

10. The method according to claim 7, wherein the increment is equivalent to the calculated value of the foreground parameter.

11. The method according to claim 2, further comprising defining an occlusion threshold, an increment to the counter being disallowed if the occlusion threshold exceeds the occlusion parameter.

12. The method of claim 1, wherein the target area comprises image data selected from the group consisting of signage existing in a site from which the image stream was captured and a synthetic image not present in the site.

13. The method according to claim 1, further comprising:  
assigning image data for insertion into the target area; and  
reassigning the image data to a second target area to be included in the image stream.

14. The method according to claim 13, wherein reassigning the image data to a second target area further comprises reassigning the image data to the second target area as the image stream is captured.

15. The method according to claim 13, further comprising:  
specifying a duration the image data is to be included within the image stream prior to capture of the image stream; and  
collecting, prior to reassigning the image data, statistical data indicative of the duration that at least one of the group consisting of the target area and the second target area is included in the image stream as the image stream is captured.

16. The method according to claim 15, wherein reassigning the image data to a second target area further comprises reassigning the image data to the second target area in response to the statistical data indicating the second target area has a higher duration of inclusion in the image stream than the target area.

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17. The method according to claim 13, further comprising calculating the duration the image data is included in the image stream by summing respective increments to the counter that is associated with the first target area with increments to a second counter that is associated with the second target area, the increments summed limited to respective increments made to the target area when the image data is respectively assigned to one or more of the target area and the second target area.

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18. A system for calculating the duration a target area is included in an image stream, the system comprising:

a model of a target area from a site from which the image stream is captured;

5 a duration calculation module that identifies inclusion of the target area in the at least one field of the image stream, the module including a counter that is incremented upon confirmation of inclusion of the target area within the at least one field; and

wherein the target area is included in the at least one field when the site is included in the image stream.

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19. The system according to claim 18, further comprising:

image insertion system for inserting a target image into at least one of the plurality of fields of the image stream, the image insertion system in communication with the duration calculation module; and

15 an image capture system for providing an image to the image measurement system, the image supply system in communication with the image insertion system.

20. The system according to claim 18, wherein the duration calculation module is included within the image insertion system.

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21. The system according to claim 18, wherein the image measurement system further comprises:

25 a model renderer for generating a synthetic image based on a predefined three-dimensional reference model of a target area within a site from a known position of a camera included in the image supply system, the synthetic image having the target image inserted in the target area thereof;

30 an image separator for masking from a video image contained within a frame of a video signal generated by the camera, the target area to create a masked background image, a masked reference image being created by the image separator by separating a reference image from the remainder of the image; and

an occlusion separator operable to compare the masked target area image to the masked reference image, the difference therebetween representing an occlusion of the target image.

5           22.    The system according to claim 21, wherein the module calculates an occlusion parameter from information obtained from the image separator.

23.    The system according to claim 22, wherein the occlusion parameter is calculated as a ratio of a pixel count of the occlusion to a pixel count of the target  
10   image.

24.    The system according to claim 22, wherein the increment is a function of the occlusion parameter.

15           25.    The system according to claim 21, wherein the module calculates a foreground parameter from information obtained from the image insertion system.

26.    The system according to claim 24, further comprising an image combiner for producing a final image from the masked background image and the  
20   occlusion, the module obtaining a pixel count of the target area from the image separator and a pixel count of the final image from the image combiner, the foreground parameter being calculated from the pixel count of the target area and the pixel count of the final image.

25           27.    The system according to claim 24, wherein the increment is a function of the foreground parameter.

28.    The system according to claim 21, wherein an increment to the counter is disallowed in the event the occlusion parameter exceeds an occlusion  
30   threshold.

29. The system according to claim 21, wherein the target area comprises image data selected from the group consisting of signage existing in a site from which the image stream was captured and synthetic images not present in the site.

5 30. The system according to claim 21, further comprising  
a model of a target area from a second site from which the image stream is captured; and

10 a duration calculation module that identifies inclusion of the target area from the second site in the at least one field of the image stream, the module including a counter that is incremented upon confirmation of inclusion of the target area within the at least one field, and wherein the target area from the second site is included in the at least one field when the second site is included in the image stream.